

### **REMARKS**

These Remarks are presented in response to the Office Action. Paragraphs [0033], [0034], and [0055] of the specification are amended. New claims 27-36 are added. Claims 1-36 are now pending in this application as a result of the aforementioned added claims.

Reconsideration of this application is respectfully requested in view of the following remarks. For the convenience and reference of the Examiner, the remarks of the Applicant are presented in the order in which the corresponding issues were raised in the Office Action.

Applicant notes that the amendments and remarks presented herein have been made merely to clarify the claimed embodiments from elements purported by the Examiner to be taught by the cited references. Such amendments and remarks, or a lack of remarks, should not be construed as an acquiescence, on the part of the Applicant, as to the purported teachings or prior art status of the cited references, nor as to the characterization of the cited references advanced by the Examiner. Accordingly, Applicant reserves the right to challenge the purported teaching and prior art status of the cited references at any appropriate time.

#### **1. Use of Trademarks in the Specification**

The Examiner notes the use of two trademarks in the present application, "HPC/H02" and "HPC/H05" and reminds Applicant that trademarks should be capitalized wherever they appear in the Application and that the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks. In addition, the Examiner asserts that "the generic terminology of the material known by the trade mark[s] stated above was not provided in the specification."

In response to the Examiner's assertion that the generic terminology of "HPC/H02" was not provided in the specification, Applicant disagrees and respectfully refers the Examiner to paragraph [0054] which reads in part, "One high emissivity coating having characteristics and properties suitable for implementing the functionality disclosed herein is the passivating thermal barrier coating known by the trade name 'HPC/H02,' or simply 'H02,' ...." (emphasis added). Applicant thus submits that the materials associated with the HPC/H02 mark have clearly been

disclosed in a generic fashion through the use of terminology such as “high emissivity coating” and “passivating thermal barrier coating.”

Similarly, in response to the Examiner’s assertion that the generic terminology of “HPC/H05” was not provided in the specification, Applicant respectfully disagrees and refers the Examiner to herein amended paragraph [0055] which reads in part, “Additionally, ‘HPC/H05,’ or simply ‘H05,’ sold under the trademark HiPerCoat® and produced by HPC, is one example of a low emissivity coating that is well suited for use in applications ....” (emphasis added).

Applicant thus submits that the materials associated with the HPC/H05 mark have clearly been disclosed in a generic fashion through the use of terminology such as “a low emissivity coating.”

In light of the foregoing remarks and the amendments to the specification herein, Applicant respectfully submits that the objection has been overcome and should be withdrawn.

## **2. Alleged Lack of Antecedent Basis in the Specification**

The Examiner objects to the specification under 37 CFR 1.75(d)(1) and MPEP § 608.01(o) for failing to provide proper antecedent basis for the subject matter recited in claims 7, 8 and 23. Specifically, the Examiner asserts that there is no antecedent basis in the specification for the emissive coating in these claims having an emissivity of about 0.6 or higher or 0.2 or lower.

In this regard, the M.P.E.P. § 608.01(l) states, “In establishing a disclosure, applicant may rely not only on the description and drawing as filed but also on *the original claims if their content justifies it.*” (emphasis added). In this case, original claims 7, 8 and 23 as filed recited an emissive coating having an emissivity of about 0.6 or higher or 0.2 or lower. Consistent with the foregoing, Applicant has herein amended paragraphs [0033] and [0034] of the specification to recite an emissive coating having an emissivity of about 0.6 or higher, or 0.2 or lower.

In light of the amendments to the specification herein, Applicant respectfully submits that the objection should be withdrawn. Applicant further submits that, consistent with M.P.E.P. §

Application No. 10/668,537  
Docket No. 14374.106  
Reply to Office Action mailed February 4, 2005

608.01(l), no new matter is entered as a result of the aforementioned amendments to the specification.

### 3. **Rejection Under 35 U.S.C. § 112, First Paragraph**

The Examiner has rejected claims 1-26 under 35 U.S.C. § 112, first paragraph, as purportedly failing to comply with the enablement requirement. Particularly the Examiner has asserted that “the claimed emissive coating which substantially compris[es] an inorganically bonded ceramic was not described sufficiently in the specification to enable one skilled in the art to make and use the invention.” The Examiner asserts that “the only example of the coating material is referred to [using the] trade names on paragraphs [0054]-[0055], [in] which the generic terminology was not provided.” The Examiner further asserts that he “has searched the manufacturer’s internet website and did not find the cited product information.”

The Examiner has also rejected claims 7, 8 alleging that “the specification also fails to provide any information as to the degree of the emissivity of the claimed emissive coating.”

Finally, the Examiner asserts that “[i]t is very confusing as to what type of inorganically bonded ceramic is qualified as the claimed emissive coating...It appears that any type of inorganically ceramic whether the emissivity is high or low can function as the claimed emissive coating.”

As outlined below however, and in light of the amendments to the specification herein, Applicant respectfully disagrees with the contentions of the Examiner and submits that the rejection of claims 1-26 under 35 U.S.C. § 112, first paragraph should be withdrawn.

Applicant respectfully notes at the outset that in order to establish a *prima facie* case of non-enablement, it is the burden of the Examiner to establish a reasonable basis to question the enablement provided for the claimed invention by stating the specific factors, reasons, and evidence that lead the Examiner to conclude that the specification fails to teach how to make and use the claimed invention without undue experimentation. See M.P.E.P. § 2164.04. (emphasis added).

In this case, Applicant submits that it is clear that the Examiner has failed to establish a *prima facie* case of non-enablement. The first factor, reason, or evidence that the Examiner gives in support of the erroneous conclusion that the claimed emissive coating was not enabled in the specification is that “the only example of the coating material is referred to trade names on

paragraphs [0054] – [0055], which the generic terminology was provided. The Examiner has searched the manufacturer's website and did not find the cited product information.”

Notwithstanding these assertions by the Examiner, Applicant clearly identified in the specification two specific examples of suitable emissive coatings and identified the name and address of the manufacturer of these coatings. Particularly, Applicant has clearly identified these coatings by their trade names, “H02” and “H05,” and has also described them in the specification using generic terminology such as “high emissivity coating,” “passivity thermal barrier coating,” and “low emissivity coating.” In disclosing these two examples of high and low emissivity coatings and disclosing the source where they can be purchased, Applicant has clearly satisfied the enablement requirement for the emissive coating in claims 1-26. One skilled in the art could, for example, simply obtain the “H02” and/or “H05” coatings from the manufacturer in order to make and use the claimed invention without undue experimentation.

Additionally, Applicant has provided extensive detail in the specification regarding particular characteristics and properties of the emissive coatings. For example, the specification indicates at [0033] that “[t]he coating comprises a durable material that is adequate to withstand typical x-ray device operating conditions while providing protection...from oxidation, corrosion, and other thermally related problems” (emphasis added). As another example, the specification at [0050] under the heading “Aspects of an X-Ray Component Coatings” indicates that:

The coating comprises a highly emissive, inorganically bonded ceramic slurry incorporating oxide filler materials, with no volatile organic compound (“VOC”) emissions, and is effective in providing corrosion and oxidation protection for iron, stainless steel, steel, titanium, aluminum and other metallic substrates. The coating has good dielectric properties, is stable in the high temperature, vacuum environment characteristic of x-ray devices, and provides effective and reliable performance over operating temperatures ranging as high as about 1450°F (emphasis added).

As yet another example, the specification at [0052], also under the heading “Aspects of an X-Ray Component Coatings,” gives specific details about methods of application of the coating:

[T]he coating is well-suited for application by way of a standard, low pressure atomizing spray gun. Exemplarily, the final thickness of the coating is achieved through multiple applications and falls in an exemplary range of about 0.0003

inches thick to about 0.0007 inches thick. However, the coating thickness, as well as the number and type of applications, may be varied as necessary to suit a particular application (emphasis added).

Finally, the specification at [0053], also under the heading "Aspects of an X-Ray Component Coatings," gives specific details about the curing of the coating:

After application, the coating is thermally cured. Exemplarily, the coating is cured for at least thirty minutes after the coated part has reached a temperature of about 650°F. However, both curing times and temperatures may vary depending upon considerations such as, but not limited to, coating thickness, part size, and part materials. Accordingly, aspects of the curing process may be varied as necessary. Finally, the cured coating comprises a porous free ceramic composite strongly adhered to the coated part, and exemplarily appears as a black semi-gloss coating having a relatively smooth surface (emphasis added).

Thus, Applicant submits that the disclosure clearly provides ample information concerning the properties and characteristics of the claimed emissive coatings, as well as information concerning methods of application and use of those coatings. In view of this extensive disclosure, and further in view of the fact that the disclosure includes two specific examples of an acceptable commercially produced coating, as well as a source for those coatings, Applicant submits that the specification provides ample materials to enable one of skill in the art to practice the claimed invention.

In connection with the foregoing, it was noted earlier herein that the Examiner has asserted that a search of the manufacturer's website did not reveal information about these cited products. However, the Examiner has cited no authority to support the proposition that an example of an exemplary product listed in a specification must be described on the manufacturer's website, nor has the Examiner cited any authority in support of the proposition that a lack of description on the manufacturer's website is a defect that must be overcome or remedied by the Applicant.

As noted above, the Examiner has also asserted that the claims are not enabled by the specification because, the Examiner has alleged, the specification lacks information about the degree of the emissivity as claimed in claims 7, 8, and 23. As noted at 2. above however, Applicant has amended the specification under M.P.E.P. § 608.01(l) to recite an emissive coating

having an emissivity of about 0.6 or higher, or about 0.2 or lower. Therefore, in light of this amendment, Applicant submits that the aforementioned assertion by the Examiner is not well taken.

Finally, the Examiner has asserted that the claims are not enabled because, according to the Examiner, the claims are confusing as to whether the emissivity of the coating must be high or low. Notwithstanding the contention of the Examiner however, Applicant notes that the specification describes examples of both high emissivity and low emissivity implementations of the emissive coating.

For example, as indicated in paragraph [0033] of the specification, “In a high emissivity implementation, for example, the coating aids in the rejection of heat from the coated component” (emphasis added). As indicated in paragraph [0034], on the other hand, “it may be desirable, in other cases, to coat portions of the vacuum enclosure 102 and/or other components with a relatively low emissivity inorganic coating, so as to reduce or prevent the transfer of heat from the coated component to nearby systems and component” (emphasis added).

The disclosed possible variation in the emissivity of the coating is clearly reflected in claims 7, 8, and 23, where specific high and low ranges of emissivity are claimed for the emissive coating. Therefore, given this explanation in the specification, and the differentiation between high emissivity and low emissivity as reflected in claims 7, 8, and 23, Applicant submits that the assertion of the Examiner is not well taken. Particularly, the emissivity of a particular coating may be relatively high or relatively low, depending upon considerations such as, but not limited to, the nature and use of the coated component.

In summary, Applicant submits that the foregoing discussion makes clear that the specification provides ample detail concerning the composition, application, and use of emissive coatings such that one skilled in the art could readily practice the claimed invention without undue experimentation. Accordingly, Applicant respectfully submits that the rejection of claims 1-26 has been overcome and should be withdrawn.

4. **Rejections Under 35 U.S.C. §102(b) or 35 U.S.C. § 103(a)**

The Examiner has rejected claims 1-2, 4-15 and 17-19 under 35 U.S.C. § 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as being obvious over *McManus* (United States Patent No. 3,400,882). Because the Examiner has not established that *McManus* teaches or suggests each and every element of the rejected claims, Applicant respectfully traverses this rejection in view of the following remarks.

As to the 102(b) rejection, Applicant respectfully notes that a claim is anticipated under 35 U.S.C. § 102(b) only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. Further, the identical invention must be shown in as complete detail as is contained in the claim. Finally, the elements must be arranged as required by the claim. *See* M.P.E.P. § 2131.

Referring to Figure 1, *McManus* states, "The ion pump of the present invention is enclosed in the metallic cylindrically shaped container 10. There is an intake port 12 and an exhaust port 13 formed in opposite ends of the cylindrically shaped container 10. A coating of ceramic material 11 covers the interior of the ion pump chamber. The walls of the pump may be any suitable metallic material such as stainless steel. The ceramic coating 11, which is optional, may be any suitable ceramic for high vacuum environments, preferable a ceramic that is not porous and that has a glazed surface exposed to the interior of the vacuum chamber." Column 3, lines 67-75 and column 4, lines 1-3.

On the other hand, claim 1 specifically requires "an emissive coating disposed on at least a portion of the body, the coating substantially comprising an *inorganically bonded* ceramic" (emphasis added). Likewise, claim 11 specifically requires "an emissive coating disposed on a portion of at least one of the surfaces defined by the metal body, the emissive coating substantially comprising an *inorganically bonded* ceramic." (emphasis added). However, the Examiner has failed to establish that the ceramic coating 11 recited in *McManus* is "inorganically bonded."



Because the Examiner has failed to establish that each and every element as set forth in the claims is found in *McManus* in as complete detail as is contained in the claims, Applicant respectfully submits that the rejection of claims 1-2, 4-15 and 17-19 under 35 U.S.C. § 102(b) has been overcome and should be withdrawn.

As to the aforementioned rejection of claims 1-2, 4-15 and 17-19 under 35 U.S.C. 103(a), Applicant respectfully notes that in order to establish a *prima facie* case of obviousness, it is the burden of the Examiner to demonstrate that three criteria are met: first, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings; second, there must be a reasonable expectation of success; and third, the prior art reference (or references when combined) must teach or suggest all the claim limitations. See M.P.E.P. § 2143.

As discussed above, however, the Examiner has failed to establish that *McManus* teaches or suggests an “*inorganically bonded*” ceramic coating as is presently claimed. Additionally, the Examiner has failed to establish that there is any teaching or suggestion within *McManus* to provide the motivation to make the modification advanced by the Examiner. Because the Examiner has failed to establish the presence of a suggestion or motivation, in *McManus*, to modify the disclosed coating so as to arrive at the claimed invention, Applicant submits that the Examiner has thus failed to establish a *prima facie* case of obviousness with respect to claims 1-2, 4-15 and 17-19. Accordingly, Applicant further submits that the rejection of those claims has been overcome and should be withdrawn.

**5. Rejections Under 35 U.S.C. §102(b) or 35 U.S.C. § 103(a)**

The Examiner has rejected claims 1-2, and 4-10 under 35 U.S.C. § 102(b) as being anticipated by, or in the alternative, under 35 U.S.C. 103(a) as being obvious over *Bliesner* (United States Patent No. 6,329,098). Applicant respectfully disagrees with the Examiner however and submits that for at least the reasons outlined below, the rejections should be withdrawn.

With respect to Figure 1, *Bliesner* recites “a 430 Stainless Steel shell for a main cell inner container 7 surrounding the working fluids. The container is coated on the inside with an electrically insulating ceramic which is also non-wetting and chemically inert relative to the salts and liquid metal. The ceramic coating consists of first a layer of Chromium Carbide applied over the Stainless Steel surface, then a layer of Boron Nitride.” Column 3, lines 8-15. *Bliesner* also teaches, “An electrode housing 3 is a structural container which holds the electrodes 28 in place. The electrode housing 3 is also made of 430 Stainless Steel and is coated both inside and outside with Chromium Carbide and Boron nitride.” Column 3, lines 24-27. On the other hand, claim 1 requires “an emissive coating disposed on at least a portion of the body, the coating substantially comprising an *inorganically bonded* ceramic.” (emphasis added).

However, the Examiner has failed to establish that the ceramic coating of *Bliesner* is “*inorganically bonded*.” Therefore, since the Examiner has failed to establish that *Bliesner* teaches each and every element of claims 1-2 and 4-10, Applicant respectfully submits that the rejection of those claims under 35 U.S.C. § 102(b) has been overcome and should be withdrawn.

As to the aforementioned rejection of claims 1-2 and 4-10 under 35 U.S.C. 103(a), Applicant submits that the Examiner has failed to establish that *Bliesner* provides a motivation or suggestion to one of skill in the art to modify the coating disclosed in *Bliesner* to comprise an “*inorganically bonded*” coating, as claims 1-2 and 4-10 clearly require. Applicant thus respectfully submits that the Examiner has failed to establish a *prima facie* obviousness with respect to claims 1-2 and 4-10. Accordingly, Applicant further submits that the rejection of those claims under 35 U.S.C. § 103(a) has been overcome and should be withdrawn.

#### 6. Rejection Under 35 U.S.C. § 103(a)

The Examiner rejects claims 3, 16, and 20-26 under 35 U.S.C. § 103(a) as being unpatentable over *McManus* (United States Patent No. 3,400,882) as applied to claims 1-2, 4-15, and 17-19 above, and further in view of *Tormey et al.* (U.S. Patent No. 5,725,808). Applicant respectfully disagrees with the Examiner however and submits that for at least the reasons outlined below, the rejections should be withdrawn.

As noted above, the Examiner has failed to establish that *McManus*, either singly or in combination with another cited reference, teaches or suggests an “inorganically bonded ceramic” emissive coating such as is recited in claims 3 and 16. Likewise, the Examiner has failed to establish that *McManus*, either singly or in combination with another cited reference, teaches or suggests an emissive coating comprising “an inorganically bonded ceramic having an oxide filler” such as is recited in claims 20-26. It was also noted above that the Examiner has failed to identify, in any of the cited references, a motive to modify the coating disclosed in *McManus* in such a way as to arrive at the claimed invention. Moreover, even if the *McManus* coating was modified in the allegedly obvious fashion advanced by the Examiner, it is clear that the resulting combination still fails to include the “inorganically bonded” limitation recited in the rejected claims.

For at least the foregoing reasons, Applicant submits that the Examiner has failed to establish a *prima facie* case of obviousness with respect to claims 3, 16, and 20-26 and, accordingly, Applicant further submits that the rejection of those claims has been overcome and should be withdrawn.

#### **7. Rejection Under 35 U.S.C. § 103(a)**

Finally, the Examiner has rejected claim 3 under 35 U.S.C. § 103(a) as being unpatentable over *Bliesner* (United States Patent No. 6,329,098) as applied to claims 1-2 above, and further in view of *Tormey et al.* (U.S. Patent No. 5,725,808). Applicant respectfully disagrees with the Examiner however and submits that for at least the reasons outlined below, the rejections should be withdrawn.

As noted above, the Examiner has not established that any of the cited references, either singly or in combination, disclose or make obvious the claimed “inorganically bonded ceramic” emissive coating. Thus, even if the purported reference teachings are combined in the allegedly obvious fashion advanced by the Examiner, the resulting combination nonetheless fails to include all the limitations of the claims. Accordingly, the Examiner has failed to establish a case of *prima facie* obviousness with respect to those claims.

Application No. 10/668,537  
Docket No. 14374.106  
Reply to Office Action mailed February 4, 2005

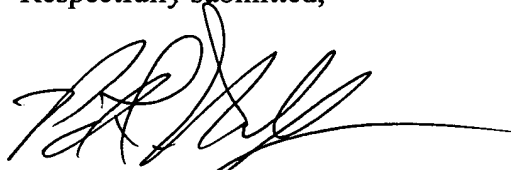
For at least the foregoing reasons, Applicant respectfully submits that the rejection of claim 3 has been overcome and should be withdrawn.

**CONCLUSION**

In view of the amendments and remarks submitted herein, Applicant respectfully submits that each of the pending claims 1-36 is now in condition for allowance. Therefore, reconsideration of the rejections is requested and allowance of those claims is respectfully solicited. In the event that the Examiner finds any remaining impediment to a prompt allowance of this application that could be clarified in a telephonic interview, the Examiner is respectfully requested to initiate the same with the undersigned attorney.

Dated this 6<sup>th</sup> day of June, 2005.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'P. Malen, Jr.', with a long horizontal flourish extending to the right.

Peter F. Malen, Jr.  
Attorney for Applicant  
Registration No. 45,576  
Customer No. 022913  
Telephone No. (801) 533-9800